MOTOR CONTROL CIRCUIT—YD6651B
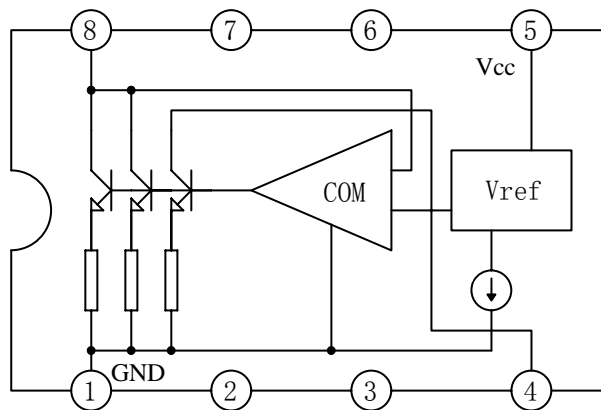
DESCRIPTION

The YD6651B is an IC designed for the rotating speed control of a compact DC motor that is used for a tape recorder, record player, etc

FEATURES

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*Small four-lead plastic package for compact motor;

*Fewer external parts;

*Stable low reference voltage (1.0V typ.), wide motor speed setting

*Highly stable operation over a wide range of supply voltage and torque supply voltage, Vcc=3.5～14.4V;

*Reverse voltage protection circuit is built-in.

BLOCK DIAGRAM

NO.	1	4	5	8	2/3/6/7
SYMBOL	GND	CON	Vcc	OUT	NC

ABSOLUTE MAXIMUM RATINGS   (Tamb=25℃)

PARAMETER	SYMBOL	VALUE	UNIT
Supply Voltage	V_{CC}	14.4	V
Supply Current	Icc (Note1)	2.0	A
Power Dissipation	P_D(Note 2)	0.6	W
	P_D(Note 3)	1.0	
Operating Temperature	Topr	-20～+75	℃
Storage Temperature	Tstg	-40～+150	℃

Note 1:　t≤5 Second

Note 2:　No radiator fin

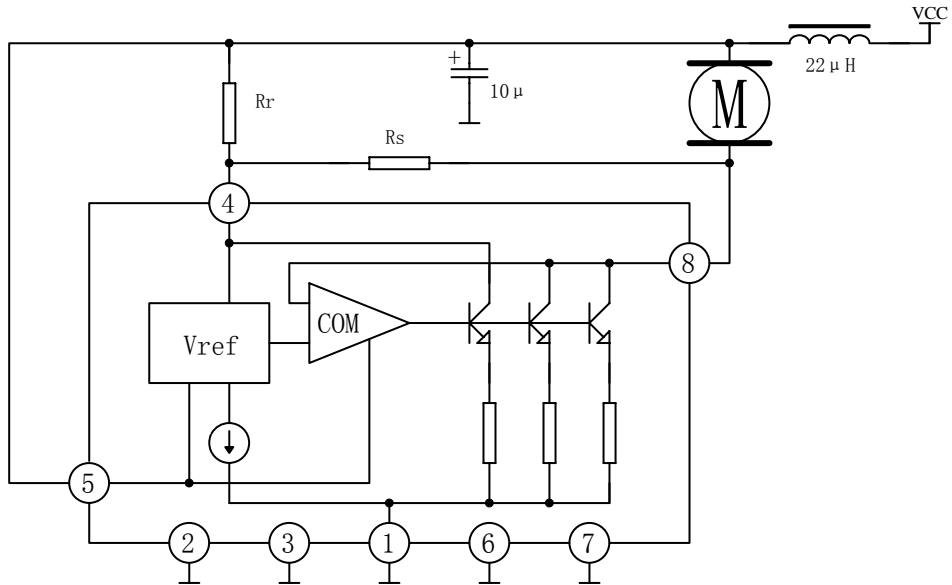Note 3:　With a $10\times10mm^2$ bakelite printed circuit board

ELECTRICAL CHARACTERISTICS

(Tamb=25℃, Vcc=6V，Unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Reference Voltage	Vref	Vcc=6V, R_M =1k Ω	0.85	1.0	1.15	V
Bias Current	I_{BIAS}	Vcc=6V		0.8	1.8	mA
Current Proportional Constant	K	Vcc=6V, I_4=40mA	35	40	45	
Saturation Voltage	Vsat	Vcc=4.2V, R_M =5.0 Ω		1.15	2	V
Voltage Characteristics (1)	$\frac{\Delta Vref}{Vref} \Big/ Vcc$	Vcc=3.5V～14V R_M =1k Ω		-0.1		%/V
Voltage Characteristics (2)	$\frac{\Delta K}{K} \Big/ Vcc$	Vcc=3.5V～14V I_4=40mA		0.2		%/V
Current Characteristics (1)	$\frac{\Delta Vref}{Vref} \Big/ I_4$	I_4=50mA～200mA		-0.02		%/mA
Current Characteristics (2)	$\frac{\Delta K}{K} \Big/ I_4$	I_4=50mA～200mA		-0.01		%/mA
Temperature Characteristics (1)	$\frac{\Delta Vref}{Vref} \Big/ Ta$	Ta=-20℃～+75℃ Vcc=6V，R_M =1k Ω		0.01		%/℃
Temperature Characteristics (2)	$\frac{\Delta K}{K} \Big/ Ta$	Ta=-20℃～+75℃ I_4=40mA		0.01		%/℃

APPLICATION CIRCUIT

Rr<Rm×40

OUTLINE DRAWING

DIP-8   unit:mm